



US Army Engineer
Research and Development Center
Waterways Experiment Station

Project Summary

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Corps of Engineers Strong-Motion Instrumentation Program (SMIP)

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Objective

The Strong-Motion Instrumentation Program (SMIP) is designed to provide insight into the safety of and to act as an inspection guide for existing and future Corps structures. Additionally, it provides a measure of project performance and acts as a data base for earthquake research.

Background

The SMIP had its inception during FY 70. Arrangements were made with the U.S. Geological Survey (USGS) to install and maintain Corps of Engineers (CE) instruments. During FY 78, Waterways Experiment Station (WES) assumed responsibility for the installation and maintenance of approximately half of the CE instruments primarily located in the eastern United States. The USGS continued to maintain those instruments on the west coast. This arrangement is in effect today.

WES Role

By CE directive, WES is responsible for: maintaining records of instrument servicing and location; reviewing instrument locations and type to assure conformance with OCE policy; processing and analyzing records; furnishing copies of records to the Districts concerned; coordinating with USGS and the Districts to establish schedules for inspection visits; billing Districts for services; reimbursing USGS for their expenses; providing personnel for installation and maintenance of CE instruments not serviced by USGS; and providing an annual cost estimate to each District serviced.

Current Status

A total of 123 projects located in 32 states and the Commonwealth of Puerto Rico were instrumented as of September 1999. Instruments in operation as of that date were 1296 accelerograph channels (129 digital), 54 peak recording accelerographs (PRAs), and 38 seismic alarm devices (SADs).

Recent Significant Events

The magnitude 6.6 earthquake which occurred on 17 January 1994 near the city of Northridge in the San Fernando Valley of southern California triggered several hundred strong-motion recorders in the greater Los Angeles region, including thirteen stations at seven sites having accelerographs operated by the US Army Corps of Engineers Strong-Motion Instrumentation Program. Peak horizontal ground accelerations ranged from 0.05 at the San Antonio Dam downstream station to a maximum of 0.23 at the Brea Dam crest station. Peak vertical ground accelerations ranged from 0.03 at Carbon Canyon and San Antonio Dams to a maximum of 0.09 at Brea Dam).

For additional information on the CE Strong-Motion Instrumentation Program, contact [Robert F. Ballard, Jr.](#) at 601-634-2201 (CEERD-GG) or email ballarr@wes.army.mil.

URL: <http://geoscience.wes.army.mil/fs-smip.html>